

REMARKS

The Office Action dated November 17, 2004, has been received and carefully noted. The amendments made herein and the following remarks are submitted as a full and complete response thereto.

Claims 1-13 are pending. Claims 1-13 are rejected. Claims 1-9 and 11-12 are amended. Claims 14-24 are new. No new matter is added. All claims are supported by at least the Specification.

Several claims are objected to for containing informalities. Also, claims 1-6, 8-9, and 11-12 are rejected under 35 USC 112, second paragraph, as being indefinite. Applicants believe that the amendments to claims 1-6, 8-9, and 11-12 obviate the claim objections and 112, second paragraph, rejection. Applicants therefore request reconsideration and withdrawal of the claim objections and 112, second paragraph, rejection.

Claims 1, 2, 6, 8-11, and 13 are rejected under 35 USC 102(b) as being anticipated by US Patent No. 4,650,815 to Namba *et al.* ("Namba"). Claim 12 is rejected under 35 USC 102(b) as being anticipated by, or in the alternative as obvious over, Namba. Applicants respectfully traverse the anticipation and/or obviousness rejection.

Applicants note that an essential characteristic of the invention compositions is that the compositions are foamable without using known foaming agents. See, the Specification, page 7, last paragraph.

The Specification, on page 3, the second and third paragraphs, discloses drawbacks of the known foaming agents. One main drawback of these foaming agents is that they produce volatile products resulting from decomposition. These volatile products can modify the electrical insulation properties of the foamed fluoropolymer. Additionally, foaming agents in the form of an inert gas have the drawback of requiring complex and expensive equipment to guarantee uniformity of electric wire.

Applicants have amended claim 1 to further define the presently claimed invention. In particular, the use of the term "consisting" limits the claimed composition to only polymer component (A) and nucleating agent component (B).

In contrast, Namba's foamable compositions contain as foaming agent a depolymerizable polymer having formula (1) component (i), or a decomposable compound as a polyether component (ii) or polycarbonyloxy component (iii). See, Namba, column 1, line 67 to column 2, line 21 and column 2, lines 22-35. In particular, at column 3, lines 16-23, Namba discloses that component (i) of formula (1) is depolymerizable and vaporizable at about 150°C, which is lower than the melting point of the fluorocarbon resin, and is effective as foaming agent.

In column 5, lines 29-31, Namba discloses that compound (iii) has the function of foaming fluorocarbon resin on thermal decomposition when heated along with the resin. Moreover, components (i) and (ii) are defined as blowing agents.

The presently claimed compositions consists of only components (A) and (B), and thereby exclude any foaming/blowing agents. The presently claimed invention is

therefore distinguishable over the composition of Namba, which contains foaming agents as essential components.

Moreover, Applicants submit that Namba does not even teach or suggest the absence or omission of blowing agents (i), (ii) or (iii) in the foaming composition. Specifically, one skilled in the art, who would attempt to eliminate the drawbacks caused by volatile products, would not have found any teaching in Namba about the solution claimed in the present claim. Rather, Namba teaches that the added blowing agents (i), (ii) or (iii) are essential components of his compositions.

Based on the foregoing reasons, Applicants submit that the presently claimed invention is novel and would not have been obvious over Namba. Accordingly, Applicants request withdrawal and reconsideration of the anticipation and obviousness rejections.

Claims 1-13 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 5,403,524 to Burger et al. ("Burger") in combination with Namba or the Polymer Technology Dictionary ("Dictionary"). Applicants respectfully traverse the obviousness rejection.

Applicants note that the gist of the present invention is to obtain foamed-molded articles having improved electrical insulation properties (e.g. wires coating). See, the Specification, page 2, first paragraph. In particular, an essential characteristic for said improved electrical insulation is that the claimed foamable composition does not include any known foaming/blowing agents. See, the Specification, page 7, last paragraph.

The Office Action acknowledges that Burger teaches a radiation-chemically degraded PTFE used as nucleating agent for preparing foamable PTFE polymers, which are different from the claimed CTFE polymer compositions. Applicants note that the object of Burger is that to improve the properties of the conventional expanded PTFEs such as those made in accordance with the method described in US Patent No. 3,953,566. See, Burger, column 2, lines 53-58 and Example 4, line 1.

Applicants further note that said expanded porous PTFE, as disclosed by Burger, is prepared by a paste-forming extrusion technique, after removal of a lubricant, by stretching the unsintered-shaped article at a temperature between 35°C and the crystalline melt point of the PTFE. See, claim 1 of US Patent No. 3,953,566. The compositions disclosed by Burger require, therefore, suitable lubricants for PTFE paste extrusion that are selected from the lubricants listed at column 3, lines 54-58. Applicants note that these lubricants are excluded from the presently claimed compositions.

Furthermore, in column 4, lines 20-28, Burger discloses that the process needs subsequent steps including the production of the pressed billet, paste extrusion with a subsequent calendering step, and, after lubricant removal, a stretching or expansion step, the sintering process, wherein said expansion step can be uniaxial or biaxial. Examples disclosed in Burger, which are cited by the Office Action, use the above process, and always obtain a membrane as the final product. These membranes, which are obtained by paste-extrusion process and subsequent stretching and sintering steps, can be prepared exclusively from high molecular weight crystalline PTFE.

Applicants note that the above membranes are far different from the wires coating by melt extrusion process of the presently claimed composition. Accordingly, the PTFE-based compositions disclosed by Burger are not analogous to the present compositions, which are suitable for thermoforming or extrusion of molded articles and in particular for foamed insulations of electric wire and cables. See, the Specification, page 8, first paragraph.

Applicants point out that one characteristic applied to the materials of the present Examples is Melt Flow Index (MI). See, the Specification, page 9. However, the MI is inapplicable to, i.e., cannot be determined on, high molecular weight PTFE polymers, such as those disclosed by Burger. Thus, the Office Action incorrectly argues that substitution of PTFE with PCTFE would have been obvious in view of teaching of Namba, which discloses functional equivalence of PTFE and CTFE polymers.

The Office Action further contends, for example, that superior tensile properties of the claimed PCTFE compositions are easily expected due to the teaching and suggestion of the Dictionary. Applicants note that the Dictionary's disclosure that PCTFE can be "melt" processed refers to the fact that PTFE homopolymers cannot be "melt" processed, as it is known in the art. It is known in the art that PTFE can be processed only by paste extrusion and subsequent sintering process.

In addition, Applicants note that Namba explicitly refers to a process characterized in that the fluorocarbon resin is heated and molded in a molten state. See, Namba, column 1, lines 63-45. Moreover, in column 2, line 51, Namba further

discloses that the useful fluorocarbon resins have a MI of 0.5-50, which means that homopolymers of high molecular weight PTFE cannot be included. Table 1 shows the MI of fluorocarbon resins with regards to Examples 1-8. Table 6 shows the MI with regards to Examples 21-27. Table 8 deals with fluororesins with respect to Examples 28-34. None of these tables teach or suggest the fluorocarbon resin of homopolymer PTFE.

Applicants submit that there is a clear error regarding the indication of tetrafluoroethylene homopolymer among the "preferred" fluorocarbon resins. See, Namba, column 2, line 54. The indication is not consistent with the totality of the disclosure in Namba, in particular the range of MI 0.5-50 indicated four lines before (line 51), unless Namba refers to a very low molecular weight PTFE (telomer), which is of no interest because of its lowest mechanical properties.

In any event, Applicants note that Burger's PTFEs composition suitable for stretching and sintering is unrelated to the claimed thermo-processable PCTFE compositions of the presently claimed invention. One skilled in the art would not have found in the references a teaching or suggestion relating to the presently claimed composition suitable for foamed wires coating.

The presently claimed invention would not have been obvious over Burger in combination with Namba and/or the cited Dictionary: Accordingly, Applicants request reconsideration and withdrawal of the obviousness rejection.

Applicants further contend that US Patent No. 5,468,782 to Mehan ("Mehan") is not pertinent prior art, as suggested by the Office Action. Mehan deals with copolymers of ethylene and chlorotrifluoroethylene (ECTFE) having at least 50% crystallinity, which covers a range outside the scope of the presently claimed invention. Thus, Mehan is not relevant.


Accordingly, Applicants respectfully request reconsideration and withdrawal of the obviousness rejection of claims 1-13.

Applicants submit that the Office Action indicates allowable subject matter in the independent, and therefore dependent, claims. In view of the above, Applicants respectfully submit that each of claims 1-24 recites subject matter that is neither disclosed nor suggested in the cited prior art. Applicants also respectfully request that claims 1-24 be found allowable and that this application be passed to issue.

If for any reason, the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper has not been timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300.

Respectfully submitted,



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